

DOCUMENT RESUME

ED 466 942

CE 083 550

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TITLE Solutions for Failing High Schools: Converging Visions and Promising Models.
SPONS AGENCY Office of Vocational and Adult Education (ED), Washington, DC.
PUB DATE 2002-03-01
NOTE 27p.; Paper commissioned for "Preparing America's Future: The High School Symposium" (Washington, DC, April 4, 2002).
CONTRACT ED-99-CO-0160
AVAILABLE FROM For full text: <http://www.ed.gov/offices/OVAE/HS/legters.doc>.
PUB TYPE Reports - Evaluative (142)
EDRS PRICE EDRS Price MF01/PC02 Plus Postage.
DESCRIPTORS Academic Standards; Benchmarking; Career Academies; Change Strategies; Cognitive Style; Cultural Pluralism; Economically Disadvantaged; *Educational Change; Educational Objectives; Educational Practices; Educational Research; English; *High Schools; Individual Differences; Language Arts; Learning Processes; Literature Reviews; Mathematics Skills; Models; Program Descriptions; Relevance (Education); Standard Setting; Student Needs; Teacher Student Relationship; Technical Assistance; Trend Analysis
IDENTIFIERS Coalition of Essential Schools; High Schools That Work

ABSTRACT

Promising solutions to the failings of traditional comprehensive high schools were reviewed to identify basic principles and strategies for improving high schools nationwide. Selected research studies, policy documents, and promising high school programs were reviewed. The review revealed the following principles for helping high schools better prepare all students for college and/or career: (1) high standards; (2) personalization; (3) relevance; and (4) flexibility with instructional strategies, time, and resources to provide multiple opportunities for success. The following promising high school reform models were profiled: (1) America's Choice (a program to raise all students' achievement up to internationally benchmarked standards of achievement in English language arts and mathematics); (2) Coalition of Essential Schools (a coalition increasing the amount and quality of learning in schools adhering to 10 common principles); (3) First Things First (an emerging national reform designed to build close, respectful, and productive relationships between students attending schools in economically disadvantaged communities and adults working in those schools); (4) High Schools That Work (a program based on the belief that most students can learn to master academic and technical concepts if given the right challenging environment); and (5) Talent Developing High Schools (a program based on dividing existing high schools into a series of academies). (References 32 references.) (MN)

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March 1, 2002

This paper was prepared for the Office of Vocational and Adult Education, U.S. Department of Education pursuant to contract no. ED-99-CO-0160. The findings and opinions expressed in this paper do not necessarily reflect the position or policies of the U.S. Department of Education.

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Nettie Legters, Robert Balfanz, and James McPartland

Introduction

There is widespread agreement that traditionally organized comprehensive high schools have become anachronisms, no longer preparing students for the world that has changed around them. A series of studies and national reports released in the 1980s identified many shortcomings to the organizational, curricular, and instructional practices of traditional comprehensive public high schools (Boyer, 1983; Carnegie Forum, 1986; Goodlad, 1984; Oakes, 1985; Powell, Farrar, & Cohen, 1985;Sizer, 1984). Large size, rigid bureaucratic structures, uninspired teaching, fragmented and irrelevant curriculum, and highly differentiated and unequal learning opportunities have been cited as primary sources of student apathy, alienation, and lack of preparation for college or career. These problems are magnified in high poverty urban high schools that suffer from chronic poor attendance, low achievement, and high dropout rates.

This paper examines promising solutions that have emerged over the past decade to the failings of traditional comprehensive high schools. We begin by referring to a number of research studies, policy documents, and descriptions of how high schools have been experimenting with different reforms to improve student engagement and learning. Based on this research, we argue that the discourse on high school reform is converging around a set of basic principles and specific reform strategies designed to move schools away from the standardized, factory model of education and toward a more personalized, focused approach that provides multiple high quality learning pathways to prepare all students for college and career.

We then describe five nationally recognized high school reform models that have become prominent technical assistance providers to high schools as part of the Comprehensive School Reform Demonstration (CSRD), School-to-Work, Small Schools, and other federal, state, and local initiatives. The models are America's Choice, Coalition of Essential Schools, First Things First, High Schools that Work, and Talent Development High Schools. Descriptions of each model include: a brief background; main organizational, curricular, and professional development components; and level of scale-up, cost, and evidence of effectiveness. In addition to the models, we also describe two widespread high school reform strategies—small learning communities and career academies—around which there is growing availability of technical assistance for schools independent of the aforementioned reform models.

These descriptions provide the basis for a discussion of the true costs of comprehensive reform in high schools, especially in failing urban high schools where deep change is needed most to close achievement gaps, motivate students, and tend to the day-to-day challenges of attendance and promotion. We also address policies and institutional arrangements that make high school reform more difficult and suggest ways in which the federal government might better support improvement in these schools. Finally, we discuss the federal role in promoting and supporting much needed research on high school reform.

The Converging Discourse on High School Reform

In 1996, the National Association of Secondary School Principals (NASSP), with support from the Carnegie Foundation for the Advancement of Teaching, released *Breaking Ranks*, the final report of its Commission on the Restructuring of the American High School (NASSP, 1996). This report was unusual in that its more than 80 recommendations focused exclusively on improving high schools. Though a major report on high schools had been published a decade earlier (Boyer, 1983), its impact was muted by the widely publicized *A Nation At Risk* and its call for an overhaul of our entire public education system. Following the logic that systemic reform should begin with children just entering the system because high school is simply too late to help struggling students, subsequent reform efforts, as well as research and policy around those efforts, focused primarily on early childhood and the elementary grades. The reform movement for the middle grades emerged in the late 1980s.

Breaking Ranks heralded what has now become a national movement to completely rethink and restructure public education for youth of high school age. The movement has been spurred on in urban areas by high dropout rates, abysmal achievement scores, and chronic achievement gaps; in suburban areas by incidents of school violence and the mediocre performance of students in non-college bound tracks; and in general by international comparisons that show dramatic declines in the relative performance of U.S. students in the high school years, and a changing economy that demands higher order skills and education beyond high school to ensure success in the workplace.

The movement also has been forwarded by positive examples of effective restructuring of high schools identified and disseminated through the Office of Vocational and Adult Education's (OVAE) New American High Schools and New Urban High Schools initiatives, and by research on high school restructuring, which focused on specific reform strategies such as small learning communities, block scheduling, and career academies (Ayers, Klonsky, & Lyon, 2000; Canady & Rettig, 1995; Kemple, 2000; Kemple, 2001; Lee & Smith, 2001). A national School-to-Work joint initiative of the U.S. Department of Education and the U.S. Department of Labor also supported innovation at the high-school level throughout the 1990s. Likewise, a federal \$312 million grant program over the past several years has supported planning and implementation of small learning communities for high-school age students. Finally, a spate of reports and conferences by groups such as the Commission on the Senior

Year in High School, the American Youth Policy Forum, New York University's Seminar on the Future of the Comprehensive High School, the National Alliance on the New American High School, Jobs for the Future, and the Aspen Institute all have raised the profile of high school reform in recent months.

What is striking about all of this practical and intellectual activity around high school reform is its level of convergence around a set of basic principles and specific reform strategies designed to address the problems of failing high schools. These core principles—high standards, personalization, relevance, and flexible time and resources—and the reform strategies associated with them, are outlined below in more detail and summarized in Figure 1 in relation to the central challenges of high schools they are meant to address.

- **High Standards:** There is widespread agreement that high schools must hold all students to high academic standards. This implies that high schools eliminate the practice of sorting students into college-bound, general, and vocational tracks. Two specific reform strategies are designed to support the vision of high standards for all—a common core curriculum, and high school assessments to measure success in that curriculum. A common core curriculum has been identified as consisting of four years of English, three or more years each of mathematics, social studies, and science, and a half-year of computer science (U.S. Department of Education, National Center for Educational Statistics, 2000).
- **Personalization:** Research shows that one of the most important factors behind student success in high school, especially that of disadvantaged students, is a close connection with at least one adult who demonstrates caring and concern for the student's advancement. Accommodating the cultural and intellectual diversity students bring to high school also requires that teachers and administrators know students well so they can address the unique learning needs of each student. There is general agreement that the vast majority of high schools are too large and impersonal, making such connections rare and highly dependent on the initiative and luck of individual students and teachers. Several organizational reform strategies are designed to help create more personalized learning environments. These include: breaking down large schools into several schools within a school (e.g. theme "houses" or career academies), which implies a decentralized governance structure within the school and a shift away from organization around subject area departments in favor of multidisciplinary and often career-focused small learning communities; interdisciplinary teacher teaming where a group of teachers from different subject-areas share the same students and work together to meet their academic and social needs; advisories and mentoring programs that provide students with consistent and multifaceted adult support throughout their high school years; and school, family, and community partnerships to create a communicating and cooperating adult support system for every student.

- **Relevance:** One of the most persistent criticisms of comprehensive high schools is that students find their classes boring and unrelated to their everyday lives or the futures they envision for themselves. This experience fosters apathy and disengagement from school. To address this, reformers have honed in on the complex web of curriculum and instruction to emphasize the integration of real-world applications and career themes into academic work, interdisciplinary and project-based activities that integrate computer and telecommunications technology, and stronger linkages between course content and students' everyday lives. Strategies also include community service, work-based learning, field study, and other activities that engage students in life beyond the school walls in ways that are positive and linked with their course of study.
- **Flexibility with Instructional Strategies, Time and Resources to Provide Multiple Opportunities for Success:** Comprehensive high schools have been faulted for expecting students with extremely diverse backgrounds and abilities to succeed in a rigid, bureaucratic environment that does little to build on their individual strengths or address their unique learning needs. Reformers find common ground in their recommendations to: increase teachers' repertoire of instructional approaches to reach a greater number of students (e.g. cooperative learning, hands-on kinesthetic activities, projects); extend the amount of time of each class period, the school day, and the school year to allow for more and more diverse learning opportunities (CITE Time and Learning Commission report); provide extra help to students who need it through catch-up courses especially designed for students who enter high school with poor reading and math skills, and chances to make up coursework in summer- or after-hours school programs; and offer opportunities for students to learn study skills and social skills to help them negotiate the rigor of high school work and the challenges of adolescence.

To note the convergence of the discourse on high-school reform around these core themes, and around some specific reform practices, is not to say that there is agreement on exactly what the new American high school should look like. For example, though two recent historical accounts offer nearly identical critiques of comprehensive public high schools in the U.S. and offer solutions based on the principles described above, the visions for change they set forth differ radically. In *The Once and Future School*, Herbst (1996) recommends a choice-based approach involving a complete dismantling of the comprehensive high school in favor of educational and/or career pathways of each student's choosing that would be pursued in the community. In *The Failed Promise of the American High School 1890-1995*, Angus and Mirel (1999) offer a much more government-driven, standards-based approach to high-school reform emphasizing national content standards, equalized funding for schools across geographical regions, more rigorous graduation requirements, and a national examination system.

Conflicting political ideologies is not the only force limiting the emergence of a unified vision for the new American high school. Research to date on high school reform is far more suggestive than conclusive. While there is a substantial knowledge base that documents some of the characteristics of high schools that work well for the majority of their students, e.g. a common core curriculum, communal as opposed to bureaucratic organization (Lee, Bryk, and Smith, 1993), we still know very little about what it takes to develop such characteristics in high schools that are currently failing the majority of their students. This gap is largely due to the nascent and experimental nature of the high school reform enterprise itself and to the current emphasis on whole-school reform. Determining the effectiveness of any one approach or reform strategy is extremely challenging because reforms are rarely used in isolation from others and contextual influences such as funding, politics, and teacher and leader quality are myriad.

Fortunately, opportunities for studying different approaches to high school reform are expanding rapidly as the converging discourse around high school reform has stimulated the emergence of whole-school reform models and technical assistance organizations designed to help high schools restructure. We discuss these approaches in the following section and later turn to questions of cost, policy barriers, and gaps in research.

Promising High School Reform Models

In this section, we describe five high-school reform models focusing on main organizational, curricular, and professional development components, level of scale-up, cost, and evidence of effectiveness for each. Four of the models—America's Choice, First Things First, High Schools that Work, and Talent Development—are recipients of five-year Model Design and Evaluation Contracts awarded in 1999 by the U.S. Department of Education's Office of Educational Research and Improvement. The fifth model, the Coalition of Essential Schools, was one of the first national high-school reform efforts to emerge in the current (1980s-1990s) wave of school reform and lay much of the conceptual groundwork for the other models. We also describe two general strategies—small learning communities and career academies—that are supported by research and technical assistance structures independent of the models. Information was gathered from websites, the Northwest Regional Laboratory's Catalog of Comprehensive School Reform Models, and personal communications with program developers and evaluators.

America's Choice

America's Choice was founded in 1989 by the National Center on Education and the Economy and was built on the New Standards assessment program designed in 1992. Its central goal is to get all students up to internationally benchmarked standards of achievement in English language arts and mathematics by the time that they graduate from high school. Upon reaching the appropriate level of achievement in

these subjects, a student will receive a Certificate of Initial Mastery. To meet this goal, America's Choice schools work on five general design tasks: standards and assessments, learning environments, community and service supports, public engagement, and high performance management.

At the high-school level, America's Choice divides the high school into two divisions. The Lower Division, consisting of ninth and tenth graders, is further organized into houses of 200-400 students, and then divided once again into classes. Students take all required academic programs within these houses. Class teachers follow students through the Lower Division and also serve as their faculty advisor. The Upper Division consists of eleventh and twelfth graders, and provides opportunities for students to choose from several different programs to match to their career and academic goals. Programs are selected on a per-school basis according to the interests and needs of the student body. If the Upper Division is divided on the basis of career plans, an America's Choice team member is responsible for assisting in the creation of programs that include receiving a high school diploma, but earning college credit or occupational skills certificates as well. All students that graduate from these schools, regardless of the specific program that they are enrolled in, are expected to have the skills required for them to attend college after graduation. High schools are further supported by a designated School-to-Career Coach and Community Coordinator, which can work either half- or full-time depending on the size of the school.

All curricular changes that take place in America's Choice schools are focused on having all students meet national standards. Curriculum is chosen that matches the national standards and changes in the schedule are made when students require extra time to meet standards. A student entering high school with English language arts deficits, for example, is assigned to a double period of English during freshman year, while students with deficits in mathematics skills are assigned to a Fundamentals of Mathematics course. If more specialized assistance is needed, a tutoring program provides opportunities for students to receive individualized instruction before, during, or after the school day, or on weekends. In addition, a dropout recovery program serves students from low-income communities who drop out of high school, helping them to recover academically and enabling them to attend college.

The America's Choice program requires that each school hire a full-time Design Coach responsible for working to implement the design with school administration and leadership. Intensive, multi-week training institutes are provided to prepare the coaches for certification as leaders in development programs sponsored by America's Choice. The certified coaches, in turn, lead the entire school faculty in a series of workshops introducing the school to the performance standards, examinations based on the standards, choosing curriculum appropriately, interpreting data from the exams, and planning from the data. After this initial training, the Design Coach continues to provide support to the school's faculty and staff. An annual national conference enables schools to work together towards meeting the standards.

Many schools in the America's Choice Design program show significant improvements on their scores in standardized tests. In Kentucky, 74 percent of these schools met or exceeded their tough state performance goals. In Chicago, 80 percent of schools showed significant increases in their citywide test scores. Effectiveness is also measured on the New Standards Reference Examinations in language arts and mathematics, sponsored by NCEE and required of all tenth-grade students. Chicago schools showed a "notable" increase in student performance in these examinations, with between one-quarter and one-half of students moving from the lowest category of achievement into a higher one.

The basic annual cost of the America's Choice program is \$65,000, but additional money is spent on development and assistance. A school can plan to spend \$9,000 on professional development and \$21,000 on technical assistance. In addition, high schools are charged \$30 per tenth-grade student to participate in the New Standards reference examination and portfolio assessment system.

There are approximately 300 America's Choice schools in 14 states, mainly Title I rural and urban schools. The participating schools serve disadvantaged and minority students, along with students learning English as a second language.

Coalition of Essential Schools

From 1979 until 1984, Ted Sizer of Brown University served as the chairman of the five-year Study of High Schools. At the conclusion of the project, Sizer founded the Coalition of Essential Schools in an attempt to address the shortcomings of schools discovered in his study, most especially the lack of opportunity students had to think critically. Unlike other high-school reform models, The Coalition of Essential Schools does not outline a specific program of reform for a school. Rather, it focuses on the belief that the amount and the quality of learning produced in a school is increased by adhering to ten Common Principles:

- 1) The school should be focused on helping students learn to use their minds well.
- 2) Less is more: Knowing few subjects thoroughly is more productive than learning little about many.
- 3) The goals of a school should apply to all students.
- 4) Teaching and learning should be personalized.
- 5) Students should be viewed as workers and teachers as coaches.
- 6) Students should demonstrate mastery of subjects through public exhibitions instead of test scores.

- 7) The school's climate should be one of "unanxious expectation", trust, and decency.
- 8) Teachers and administrators are primarily generalists and should assume responsibility for all students.
- 9) The school should attempt to meet certain administrative and budgetary guidelines: eighty students per teacher, adequate planning time for teachers, competitive salaries, and per pupil costs that are no more than ten percent greater than those of traditional schools.
- 10) Honor diversity, challenge inequity, and model democratic practices.

From these principles, schools are given the task of redesigning themselves. This process is divided into three stages: an exploring stage where the ideas behind the Common Principles are explored and discussed by the entire school community; a planning stage where a vision statement in line with the Coalition's goals is drafted and specific reform actions are planned; and full membership, when these actions are implemented to achieve the school's vision. The resulting changes vary depending on how the individual school interprets the Principles. Changes that do occur in structure or personnel should value the eight organizational principles, which all involve creating a commitment to change, flexibility, collaboration, and personalization. Schools may make an effort to decrease the pupil/teacher ratio, convert to block scheduling or team teaching practices, or change evaluation procedures to value in-depth projects and exhibitions of a student's work over exams and test grades.

The Coalition provides a number of opportunities for schools to share the ways in which these Principles have been implemented successfully, and encourages the sharing of approaches that have satisfactorily put them into effect. Summer institutes, yearlong "treks" for peer critiquing, national conferences, and regional Coalition centers all are designed to offer opportunities for professional development. In addition, the Coalition sponsors several publications, including HORACE, which explores various aspects of the Coalition's work, and the PERFORMANCE series, honoring schools that have most successfully implemented the Principles in their curriculum.

Case studies of successful essential schools such as those chronicled in the PERFORMANCE series provide the best evidence of the Coalition's effectiveness. In these outstanding schools, changes have resulted in very high graduation rates, as well as high rates of students going to college. Central Park East Secondary School in East Harlem, for example, had a graduation rate of over percent. More than 90 percent of these graduates went on to postsecondary education. Studies, however, have found little improvement in the standardized test scores of essential schools. In addition, a lack of a unified vision in the school caused some to fail. Effective, strong leadership that is open and inclusive to community and staff was essential in the successful sites.

In accordance with the ninth Principle, costs for essential schools should not require a per-pupil spending increase of more than ten percent. Spending increases mostly go towards changes in staffing or organization that a school believes are necessary to implement the Principles. Participating in the seminars and evaluations offered by the coalition, however, cost approximately \$50,000 per year.

As of January 1, 2001, there were 1,084 schools involved in various stages of implementing the Principles of the Coalition of Essential Schools. Of those schools, 251 were full members, 275 were at the planning stage, and 558 were at the exploring stage. Essential schools come from a variety of geographical and socioeconomic backgrounds, such as wealthy suburban schools and city schools serving large numbers of at-risk students.

First Things First

First Things First (FTF) is an emerging national school reform model developed by the Philadelphia-based Institute for Reform and Research in Education (IRRE). Originally piloted at Wyandotte High School in Kansas City, Kansas, FTF is currently being scaled up district-wide in Kansas City with support from the Ewing Marion Kauffman Foundation. A grant from the U.S. Department of Education is supporting scale-up in five additional pilot sites across the country.

A primary goal of First Things First is to build close, respectful, and productive relationships between students attending schools in economically disadvantaged communities and adults working in those schools. The program is based on the following seven features:

1. Lower student/adult ratios during core instructional periods
2. Continuity of care achieved through the establishment of small learning communities where no more than 8-10 professional adults stay with the same group of no more than 150-200 students for extended periods of time during the school day and for at least two-year periods in high school.
3. High, clear, and fair academic and conduct standards that define what all students will know and be able to do by the time they leave high school and at points along the way in their school career.
4. Enriched and diverse learning opportunities that make learning more active and connected for students and incorporate multiple and performance-based assessments.
5. Intensive staff involvement in improving instruction based on a shared vision of high quality teaching and learning; implementing research-based instructional strategies; and study of student work and research to improve curriculum and instruction.

6. Flexible allocation of resources (people, facilities, time, and funds) by teams and schools based on students' academic and interpersonal needs.
7. Collective responsibility encouraged through incentives and consequences for small learning communities, schools, and central office staff linked to changes in student performance.

Wyandotte High School began implementing First Things First in 1998/99. School staff ultimately developed eight small learning communities with focus topics like business entrepreneurship, technology, and the humanities. Instructional time was reorganized around fewer, longer class periods, and a practical focus was incorporated, with students participating in job shadowing, tutoring elementary students, and building computer labs for example. Early results at Wyandotte showed a 25 percent increase in the number of seniors qualifying for graduation; a 57 percent decrease in the number of suspensions; and improved daily attendance and parental involvement. In another Kansas City High School implementing First Things First, one quarter of students were reported to have increased their reading levels by three or more grades in just one year. FTF is currently pursuing a cluster approach in Kansas City, linking high schools with their feeder middle and elementary schools to expand the "community of care" principle to the lower grades and implement a more systemic approach to school improvement.

Technical assistance supporting FTF implementation focuses on helping schools form small learning communities, improve teaching and learning, and establish a family advocate system. FTF uses one- to two-day Leadership Roundtables and visits to FTF schools to build awareness among school and district leaders about FTF, its research base, implementation, and terms of partnership. Once a partnership with a school is established, a full-time school improvement facilitator (SIF) guides school- and district-based staff through a year long planning process. This involves initial training of school-based staff, student and parent representatives, and district leaders to prepare them for leading FTF reforms in the school. During the planning year, the SIF and building staff co-facilitate Full Staff Roundtables to gain participation of staff in study and work groups around different components of the reform approach. These work groups function throughout the year to plan, staff, and recruit students into the small learning communities, develop schedules for the SLCs, and begin planning around course development, professional development, the Family Advocate System, and other implementation details. FTF national personnel provide technical support to the SIF and building leaders to help manage, troubleshoot, and monitor the planning process. Planning for instructional improvement involves initial training in cooperative learning and identification of selected staff to participate in additional training so they may serve as instructional improvement coaches during the first implementation year. The SIF and building leadership, supported by FTF national staff and consultants, are active during the first implementation year as well to ensure strong implementation of SLCs and deepen instructional improvements.

First Things First has just begun more widespread scale-up of its approach. Though actual pricing of the model is still under development, schools can expect to pay

for the full-time SIF, FTF consultant fees, and release time for staff during the planning year. The Manpower Development Research Corporation is currently conducting an evaluation of the program's scale-up activities and overall effectiveness.

High Schools That Work

High Schools that Work (also known as Making Schools Work) started in 1987 under the Southern Regional Education Board-State Vocational Consortium. The reform effort is based on the belief that most students, given the right challenging environment, can learn to master complex academic and technical concepts. Three major goals of the program are: to raise the mathematics, science, communication, problem-solving, and technical achievement of more students to the national average and above; to combine college-preparatory studies with quality vocational and technical studies; and to advance state and local policies and leadership necessary to continuously sustain a school-improvement effort. SREB also outlines ten key practices for student achievement: high expectations, vocational studies, academic studies, program of study (completing a major), work-based learning, teachers working together, students actively engaged, guidance, extra help, and keeping score through student assessment. Interested sites must agree to support the HSTW framework, conduct at least a five-year improvement plan, and take part in the HSTW assessment.

In order to realize these goals, High Schools that Work encourages school collaboration on many levels: sites align with middle schools, postsecondary institutions, and businesses to decide what types of classes students should be taking; and teachers are given more time to work together during common planning periods, which allows for both academic and vocational teachers to plan integrated studies that result in greater improvements in student learning.

Students in HSTW schools are responsible for taking college-preparatory and vocational courses. Low-level or general educational courses are removed from the curriculum, allowing all students to be put in the challenging environment in which they will be able to master advanced academic concepts. The recommended preparatory curriculum for HSTW schools includes four credits in English, three credits in mathematics, three credits in science, and three in social studies classes. In addition, each student is required to "major" in either a technical field or in academic studies. Four credits are earned in the major, and two additional credits are required from related fields. Included here is at least one-half credit in a computing course. An extensive guidance and counseling system, involving both school counselors and trained teacher-advisors, works with assigned groups of students to help students meet the demands of these programs.

High Schools That Work also provides extensive professional development and training opportunities. This training includes a two-day site development workshop, a four-day annual national HSTW conference, a national leadership forum for state policy-makers, a three-day retreat for system or school leaders, a three-day technical assistance leadership training for district and state leaders, and two weekend

workshops on various topics. Schools that are members of HSTW also have opportunities to work with state departments of education for additional services. Follow-up visits are also offered in the first year of implementation to address the site plan, and technical assistance is offered in the two subsequent years of implementation. Newsletters and other networking opportunities are offered to link developing schools in the system with successful sites.

An assessment program provides evidence of the effectiveness of High Schools That Work. The assessment, based on the curriculum frameworks for the National Assessment of Educational Progress, involves achievement testing of reading, mathematics, and science. Seniors about to complete a vocational or technical concentration are required to take this test. Between 1994 and 1996, the percentage of these students meeting the performance goals in reading increased from 33 percent to 43 percent, while the percentage in math increased from 34 percent to 44 percent. The ability of individual sites to meet performance goals increased as the sites remained in the network. Case studies of five sites implementing the key practices also showed improvements in achievement and attendance, graduation, retention, and post-secondary attendance rates. The highest-performing schools showed significant improvements in curriculum, instructional practices, and performance indicators.

The three years of implementation cost between \$25,000 and \$35,000 per year, including services such as site development conferences, planning, technical assistance visits, staff and curriculum development, training and resource materials, team conference registration, an assessment package, and an evaluative study. Other expenses may be incurred, including funds for stipends and substitute teachers, new curriculum, and travel expenses.

In May of 2001, over 1,300 schools were members of High Schools that Work, and 21 states were identified as member states.

Talent Development High Schools

The Talent Development High School with Career Academies was founded by the Center for Research on the Education of Students Placed at Risk (CRESPAR), jointly sponsored by Johns Hopkins University and Howard University. Its central goal is to improve achievement of at-risk students in large high schools, but also addresses concerns about attendance, discipline, and high dropout rates. The model was first implemented at Baltimore's Patterson High School during the 1995-96 school year, designed jointly by Patterson and Johns Hopkins to reform and "turn around" the high school.

The Talent Development High School divides the existing high school into a series of academies. A Ninth Grade Success Academy serves to help students transition smoothly into high school. In the upper grades, Career Academies enroll approximately 250-350 students each, providing every student with college-preparatory academics as well as work-based learning experiences. Within these academies,

students study one of several career pathways, with a team of teachers working in each pathway. Each academy has its own faculty, management team, section of the building, and entrance to the high school. For those students with severe discipline or attendance problems, or who have come from another school, the Twilight School offers an alternative after-hours program with extensive guidance services.

School days are organized into four flexible periods a day of 80 or 90 minutes each. In the Ninth Grade Success Academy, these periods include classes with curriculum developed by CRESPAR, including two semesters' worth of classes in English and Mathematics. In addition, a Freshman seminar course is required during the first semester of ninth grade in order to give students an opportunity to develop the necessary study and social skills needed to succeed in high school. CRESPAR currently is piloting Talent Development Writing and Literacy Lab for 9th graders, 10th grade Math and English curriculum, and supplemental materials designed to blend themes of individual Career Academies into core courses.

In order to become a Talent Development High School, school faculty must go through an application process in which they commit to the program and initiate planning. The summer prior to the planning year, a team of school administration and faculty attends a two-day TDHS Planning Year conference in order to understand the organizational and curricular components of the model. A program facilitator is assigned to the school during this time to guide faculty and staff through the planning year, aiding them in planning academies, changing the layout of the school as needed, and adjusting the curriculum to match the TDHS model. Training is also provided in leadership, scheduling, teaming, use of the extended period, and ninth grade curriculum. The year ends with a second two-day retreat for faculty and administrators. Technical support is provided during the first 2-3 years by a team of program and instructional facilitators, and on-site curriculum assistance is supported by monthly workshops involving a network of schools implementing the TDHS design.

After two years of implementation at Patterson High School, there was a 20 percent increase in the number of students passing the mathematics section of the State Functional Exams, giving the high school the highest pass rate in Baltimore City's neighborhood high schools. Writing scores increased from 45 percent to 57 percent, giving the school the third highest pass rate. Reading scores dropped by two percentage points. Surveys continue to illustrate improvements in various measurements of student conduct (including absenteeism, drug use, violence, and apathy), and rates of attendance and promotion increased. The increase in the number of ninth-graders earning promotion to the tenth grade was particularly impressive. These improvements in school climate were also experienced by two Philadelphia high schools that implemented the program. Evaluations of the Ninth Grade Instructional Programs from four other high schools in Philadelphia and Baltimore show increases in standardized test scores generated by the Strategic Reading and Transition Math Courses. The number of students who passed freshman classes in English, Algebra, and science doubled from 1998-99 to 1999-2000 and were promoted at a greater rate.

The average annual cost of implementing the Talent Development High School model varies based on whether a school is in a planning or implementation year, and whether the program is being implemented in only one or in multiple schools within a district. TDHS requires an annual research and evaluation fee of \$10,000, which covers surveys, data collection and analysis, and regular contact with a design team member. Other costs of the program include between \$30,000 and \$70,000 worth of technical assistance from TDHS, and salaries ranging from \$60,000 to \$80,000 for an on-site program facilitator and curriculum coaches in English, Math, Freshman Seminar, and teacher teaming. Ninth grade curriculum materials developed by CRESPAR cost between \$14,000 and \$20,000 per course in the first year, with second year costs decreasing to cover replacement of consumable materials. Total direct costs of the model amount from \$100,000 to \$175,000 for a planning year and from \$295,000 to \$395,000 for implementation years. On average, TDHS costs between \$73-\$116 per student for planning and \$197-\$263 per student for implementation. Additional costs vary depending on the amount of redesigning needed to provide each academy of the school with its own signs, entrances, and space, and professional development release time required by the participatory TDHS planning process.

As of May 2001, 35 schools have implemented the TDHS program. High schools in the program are generally large, urban, and contain a large proportion of at-risk students. The Manpower Development Research Corporation currently is conducting a third-party evaluation of the program.

General Strategies for Improving High Schools: Small Learning Communities and Career Academies

The large size of most public high schools was once viewed as an advantage since a large, comprehensive high school had more resources, could offer more varied courses, and served as a focal point of pride and social activity in a community (Conant, 1959). More recently, however, a growing body of evidence points out the deleterious effects of large schools on a host of student outcomes, including achievement, attendance, involvement in school activities, and dropout rates (Lee & Smith, 2001). Research on school size has spawned a widespread movement toward smaller schools and the creation of self-contained "houses," "charters," or small learning communities (SLCs) within large high schools. In general, SLCs have been found to have positive effects on students' relationships with peers, teachers and staff, extracurricular participation, and a sense of community and teamwork among staff. Students participating in SLCs also have been found to have better attendance, course passage rates, and fewer suspensions compared to demographically similar students in more traditional high school settings. These same studies show, however, that the major change in organizational structure combined with local politics, lack of leadership, and scarce resources make it difficult to achieve strong implementation of SLCs on a district-wide scale. These studies further show that weak implementation limits positive outcomes for students and staff (see Wraga, 1999 for review; Lee, Ready, & Johnson, 2001).

The weight of evidence demonstrating advantages of smaller, more personalized, organizational structures in schools has fostered a large federal grants program to support more widespread development of such structures in high schools across the U.S., as mentioned above. Moreover, as the descriptions of the reform models indicate, breaking down large high schools into smaller units has become a central feature of most high school reform approaches. Technical assistance is now being provided by a variety of education consulting agencies a part from the national whole-school high-school reform models to aid the development of smaller schools and/or breaking down large high schools into smaller schools-within-a-school. The Chicago-based Smalls Schools Workshop is a prominent example (Ayers, Klonsky, & Lyon, 2000).

Career Academies are a special type of high school reform approach that combine the personalized environment of a small learning community with the relevance of a career focus. Developed in the late 1960s in Philadelphia, career academies are small learning communities that offer a high level curriculum of academic and technical courses and work-based learning opportunities that prepare students for both college and/or the world of work. In the 1980s, career academies were developed for different fields (business, automotive, health, environmental technology, law, horticulture, tourism, aviation) with support from Philadelphia Academies, Inc., the California Partnership Academies, and the National Academy Foundation. The 1990s saw a dramatic expansion of the number of career academies associated with these three groups, growing from just over 100 in 1990 to over 700 nationwide by 2000. Recent state-level initiatives, in Illinois for example, and the incorporation of career academies into district- and school-based high school reform efforts have contributed to the growth of the career academy movement as well. Researchers now estimate the number of career academies at over 1,000 and rising (Stern, Dayton, and Raby, 2000).

A recent, comprehensive summary of studies that examine the effects of career academies on student engagement, achievement, and attainment found positive but not conclusive effects of career academies on student attendance, credits earned, grades, graduation rates, dropout rates, and college attendance (Stern, Raby, & Dayton, 2000). One study of career academies conducted by the Manpower Development Research Corporation (MDRC) widely regarded for its random assignment and longitudinal design has followed treatment and control groups of students across all 10 sites since 1993. The MDRC study confirmed many of the positive results of career academies on student outcomes and found that the strongest effects of the academies studied were among students at highest risk of school failure (Kemple & Snipes, 2000). The most recent follow-up to the MDRC, however, echoes other inconsistent findings in studies of the longer-term impact of career academies on student outcomes (Kemple, 2001).

Most high schools experimenting with career academies have only one academy that serves a small group of students. A growing number of schools, however, are using the career academy approach as a strategy for whole-school reform. These

schools provide an academy experience for every student by replacing the traditional departmentalized structure with multiple, "wall-to-wall" career academies. In addition to the Talent Development model described earlier, the Career Academy Support Network (CASN) based at the University of California at Berkeley serves as a clearinghouse for information about career academies and now provides technical assistance to schools and districts interested in implementing single and wall-to-wall career academies.

Fixing Failing High Schools: Costs, Policy Barriers, and Research Needs

The reform models and strategies described above all represent real-world efforts to redesign high schools around the principles outlined at the beginning of this paper. Growing interest in these models and accelerated activity around high school reform in general indicate an unprecedented momentum for moving away from the large, bureaucratic, departmentalized, tracked structures that characterize the traditional public comprehensive high school. Several issues must be addressed at this historical moment, however, to ensure that efforts to transform high schooling are guided by clear vision and intelligence, and supported by the resources and research needed to do the job well.

Costs of Comprehensive High School Reform

Descriptions of the reform models in the previous section offer insights into the extent of support needed to restructure large, comprehensive high schools. All five models call for substantial amounts of planning time and professional development for teachers and administrators to reorganize their schools; develop and/or learn and practice new curriculum and instructional techniques; build a student-centered culture characterized by ongoing communication and teamwork; and participate in cross-school networks with schools implementing the same models to share best practices and engage in continuous reflection and improvement. To varying degrees, each of the models requires technical assistance providers to work on-site to ensure quality planning and implementation. Schools adopting the Talent Development model, or any approach that involves breaking down a large school into several smaller, self-contained, schools-within-a-school, will incur costs related to changing their facility to accommodate the new structure. Small learning communities also typically require increased staffing in core subject areas, as does a schedule built around extended 90-minute periods. Schools serving a large number of low performing, special education, and ESL students face additional staffing needs, especially in English and math, if they are going to implement the extra help and catch-up components.

The cost estimates of the four models range from \$35,000 to over \$200,000 per year. One of the main features that differentiate the higher from the lower-cost models is the amount of sustained, on-site technical assistance partner schools receive, and whether specific curriculum materials are part of the package. An important question that we have faced in our own experience and recommend be posed at the federal level in discussions about programs supporting whole-school, high school reform (e.g. CSRD, Smaller Learning Communities Grants) is whether all high schools need the intensive (and expensive) technical assistance and curricular support built into some reform models, or whether some schools might be able to achieve similar reform goals without such intensive support.

We would argue that there is a substantial federal role in identifying and targeting resources to mainly high poverty high schools in which weak institutional capacity and chronic failure demand a high level of intensive support for the kind of organizationally, technically, and culturally complex change called for by the current reform movement. For example, recent research covering two four-year student cohorts (1988/89-1991/92 and 1991/92-1994/95) estimates that there are about 250 high schools in the nation's largest 35 cities where the senior class has 50% or fewer students than the entering freshmen class four years earlier. These schools are predominately attended by minority students and are responsible for many of the nation's dropouts (Balfanz & Legters 2001). While this is not an insignificant number of schools, it does not seem out of the bounds of human agency to make substantial improvements in those schools given a strong reform design, quality technical assistance, and adequate resources. Title I is the most obvious potential source for such funds. According to a recent report, Title I funding is disproportionately low in middle and high schools relative to the number of low-income students they serve (Alliance for Excellent Education, 2001). Fully funding this program and targeting adequate funds directly to the most troubled high schools could go a long way to improving secondary education for a substantial proportion of disadvantaged youth across the nation. Reviving funding for the recently sunsetted national School-to-Work program specifically to advance integration of academic and career education at the high school level and targeting it toward large urban areas could also be a source of support for such an effort. As we describe below, a vision for such integration should be communicated with coherence across all levels of the education system—federal, state, district, and school, and be supported on all fronts—organization, curriculum, and instruction.

Institutional and Policy Barriers to Effective Reform

Four of the five models described above promote an integration of high standards academic work with a career focus to make high school challenging, meaningful, and engaging to students. Realizing this integration in practice is no mean feat, however, and changes could be initiated at the federal level to make it easier. One of the most frustrating experiences of reforming high schools to date is found in the multiple and mixed messages they receive from state and federal programs about the relative importance of high academic standards versus relevant, applied, and career-focused educational experiences. Over the past decade, much of the sustained focus

and funding for high school reform has come out of the national School-to-Work movement, with the result of greatly expanding such reforms as career-focused small learning communities and career academies across the country. At the same time, the national standards movement has instigated the development of new high stakes tests in an increasing number of states with the remainder now facing a federal mandate to follow suit.

In theory, high performance on tests of advanced learning and higher order skills at the high school level is by no means precluded by reforms that integrate academic and career foci. In practice, however, there appears to be little communication between state/district-level curriculum and instruction departments on the one hand, and state/district-level school-to-work or career and technology education departments on the other. Moreover, in a standards-based reform environment, curriculum and instruction trumps career technology which, at the school level, means that time that might be used to teach (or learn to teach) in more contextual and applied ways is more likely to be used for test preparation. Our experience also has been that anxiety around performance on state tests has a depressive effect on curricular and instructional innovation, at the school and especially at the district levels.

This discussion suggests two ways that the federal government can help high schools receive clearer messages about the direction in which they should invest their reform energies. First, the U.S. Department of Education could model institutional coherence by creating a national office dedicated to high school improvement that would house under one administrative roof all federal activities affecting high schools. This office would promote alignment of all reform efforts including not only those focused on standards or career themes, but those relating to special education, ESL, health and safety, service learning, and other programs presently operating in high schools. This office also would promote organizational changes designed to help high schools build and sustain the partnerships with employers and community organizations necessary for work-based learning, apprenticeships, and other experiential education opportunities.

Second, the Department could spearhead a major curriculum development effort akin to the National Science Foundation's standards-based math curriculum project. One of the greatest weaknesses of the current high school reform movement is the lack of curriculum that is aligned with high national and state standards, designed for innovative and multiple instructional methods, *and* integrates career/occupational content. We have learned from many years of reform that teachers generally have neither the time nor often the skills to develop curricula. When they do develop quality material, the products are typically not readily transferable to others because they were created for a unique situation. We are not recommending the development of a single national high school curriculum, nor would we expect that any packaged curriculum would be able to specify all the applied, experiential activities that would work in a local context. Teachers must still be given time, support, and incentives to make any curriculum come alive for their students, and staff are needed at the school site to create and sustain work-based learning activities with employer partners. However, we

envision support given to a small number of development groups to create models of standards-based curriculum that creatively integrates occupational content into academic coursework for each subject-area. Such curriculum might be developed in traditional textbook form, and/or in the form of a large, relational database similar to one being developed by James Connell and the First Things First program where courses, units, lessons and learning activities will be organized and accessed according to the varying state standards and core academic courses. Added to such a living and continuously updated database could be a field designating specific career areas (e.g. health, business, law, journalism, teaching, etc.) and lessons that creatively integrate career themes into academic coursework. High quality curricula designed with the core principles of high-school reform described at the beginning of this paper would go a long way toward providing teachers with the tools they need to bridge the gap between standards and relevance.

Research and Development Agenda

There is a significant federal role in supporting research that tracks and evaluates the reform experiments currently underway in a rapidly growing number of high schools across the country, and in carrying reform to the next level. We recommend a research and development agenda constructed around three core areas:

1. Process, Impact, and Comparative Analyses of Existing Comprehensive High School Reform Models. The models described above are being developed by organizations that make an effort to collect and disseminate data on the effectiveness of their respective interventions. Support for developer-driven research efforts should continue in order to capture the rich experiences and information that emerge from intimate relationships between developers and the high schools they work with. Developer research efforts also are vital to the continuous improvement and refinement of the various models and the processes developers use to interface with schools. Third party evaluations, such as those being supported by the current Design Contracts, are also a critical source of information about effective implementation and overall impact of the various reform models. Given that the current wave of high school reform is still in its infancy, the difficulty and complexity of the enterprise itself, and the fact that several of the reform models discussed here are relatively new, we would argue that currently funded third-party evaluations be extended beyond the initial five-year period. On the other hand, we also argue that the various models are now developed enough to support the beginnings of some comparative investigations of the effectiveness of different models across variables including school type, size, location, and student population served, and propose sponsorship of such studies at the national level.
2. Studies of High School Reform Components. The convergence of high school reform efforts around several core principles and identifiable strategies points to the need for more research on each of the components. Most

prominent is the need for more research on *small learning communities* (SLCs). What conditions and processes are necessary for successful implementation of either single or school wide SLCs? What value orientations among teachers and administrators are necessary and how are those values most efficiently inculcated? How do teachers develop and maintain subject-area quality and community in an interdisciplinary organizational unit? These, along with the basic question of impact on student outcomes, are only a few of the questions that should be addressed with respect to this increasingly widespread high school reform strategy.

Research on *career academies* as an important type of small learning community approach also must be pursued. While the MDRC study cited above has made great inroads, its sample was randomized only across students who had already applied to be in a career academy. The most recent report found that both treatment (Academy) and control (non-Academy) students had high rates of high school graduation, college enrollment, and employment relative to similar students nationally. MDRC's finding that the career academy experience was most effective for the most disadvantaged students suggests that there is still a great deal to be learned about the effectiveness of career academies for students who may not be motivated to enroll in a career academy on their own. Moreover, an increasing number of schools are experimenting with going "wall-to-wall" with career academies, opening an extremely important vein of research related to the scalability of this reform strategy.

Related to research on SLCs and career academies are two additional areas that require intensive investigation. The first is *partnerships*. Linkages between schools and family, community organizations, business and industry, professional development networks, and technical assistance providers/model developers are being emphasized as a central component of high school improvement with unprecedented forcefulness. Despite their growing importance, however, these relationships remain undertheorized and understudied, leaving open questions such as: What conditions are necessary for effective partnerships? What does it take to establish and sustain them? What is the role of intermediary staff and organizations designed specifically to facilitate such partnerships?

Curriculum and instruction is a final reform area where there is a tremendous need for more experimentation and research. Research and development (R&D) around curriculum that integrates high standards academic curricula with occupational and career content is vital, as we discussed earlier. Similarly, R&D around instructional techniques that support applied, contextual learning, such as the projects supported by OVAE's current program in this area, should be continued and expanded. In another paper, we also make recommendations for R&D around transitional catch-up curriculum needed for students entering high school with poor prior academic

preparation to succeed in high standards college preparatory courses (Balfanz, McPartland, & Shaw, 2002).

3. Studies of High School Reform in High Poverty, High Minority Urban Districts. Many of our Nation's failing high schools are located in large, urban centers and serve primarily minority students living near or below the poverty line. Can these schools be turned around? What does it take? How much does it cost? What are the conditions for success? How do we measure success and can we collect accurate data to do it? If they cannot be turned around, what are viable alternatives for students who attend them? Should the predominant system that features elite magnet high schools, vocational high schools, and general neighborhood comprehensive high schools continue in these districts? If so, how can more equity be achieved? If not, what will replace it? If we are serious about high standards for all children, and serious about the goal of "no child left behind," then an intensive focus on improving high schools in our urban centers and developing the knowledge base in this area is absolutely critical.

Focus on the federal level in each of these three areas should necessarily be combined with the Department's stated commitment to high quality, rigorous research, by promoting studies based on experimental, match-control, and longitudinal designs utilizing both quantitative and qualitative data.

Conclusion

From the flurry of conferences and reports on improving our nation's high schools to conversations that we have held with teachers, administrators, and also students in the schools we work with, there is a compelling sense that change is inevitable and that there is no going back. While we remain a good distance away from being able to define exactly what the new American high school (or schools, or schooling) will look like, we have argued in this paper that theory and practice are converging around a core set of principles and reform strategies. We also have argued that there are substantial federal roles in targeting resources for reform to schools with the greatest needs, removing institutional and policy barriers to effective reform, and promoting research and development in key areas. In these ways, national leaders in education can help ensure that the changes in high schooling over the next decades will occur with adequate support, thoughtful guidance, and a conscious emphasis on balancing the concerns of standards, relevance, and equity.

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Figure 1

Challenges Facing Comprehensive Public High Schools,
Common Reform Principles Designed to Address those Challenges,
and Specific Reform Strategies

CHALLENGE	REFORM PRINCIPLE	STRATEGIES
<u>Anonymity</u> The large size and organizational structure of most high schools makes it difficult for students and adults to know one another well.	<u>Personalization</u> High schools become caring and supportive places where students and adults know one another well.	• Small learning communities • Schools-within-a-school • Smaller schools • Interdisciplinary teaming • Advisories and mentors • School, family, & community partnerships
<u>Apathy</u> High school curriculum is viewed as dry, boring, and unrelated to students lives or futures, only prepares a select few students for advancement to college, and does little to prepare students for success in our changing economy and society.	<u>Relevance</u> High school curricula prepare all students for 2 or 4-year college and careers. Curriculum and instruction are also designed to engage and motivate diverse learners.	• Career themes, clusters, or academies • Integrating academic and career curricula • Cooperative, contextual, and constructivist teaching methods • Applied, field-based, hands-on projects and activities • Integrating computer and telecommunications technology • Work-based learning (job shadowing, internships)
	<u>High Standards</u> High schools eliminate tracking and hold all students to high academic standards.	• Common core curriculum that prepares and certifies all students for postsecondary education • End-of-course and high school graduation exams
<u>Diversity</u> High school students are increasingly culturally and linguistically diverse. Students also possess multiple intelligences and learn in different ways. Students also arrive in high school with extremely diverse prior academic preparation.	<u>Flexibility with Instructional Strategies, Time and Resources</u> High schools provide multiple and varied learning opportunities to promote success for all students.	• Increase teachers' repertoire of instructional approaches • Extended class periods, school days, and school year • Extra help to students who need it through catch-up courses and summer- or after-hours school programs • Opportunities to learn study skills and social skills to promote success in high school work in life



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